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ABSTRACT

Although millions of young children spend much of their lives in classrooms, research rarely provides guidance to teachers organizing classrooms for play activities. Psychological literature on social play and pretend play illustrates the absence of clear guidance. Whereas early research posited a progression through levels of social play (i.e., solitary, parallel, associative, cooperative), subsequent findings have not supported the thesis that children progress in an ordered fashion through levels of play. Futher, the relative value of different levels of play is a matter of controversy. Teachers have received guidance concerning how the realism of materials affects pretend play in children of preschool age. However, few child development studies suggest features of architecture and settings that might promote pretend play. Priorities within child psychology, the experimental research paradigm, and difficulties in manipulating the physical environment may account for the absence of empirical findings providing guidance to teachers. Ethological studies of social play do suggest that materials and setting strongly influence the nature of children's social play, but these studies also provide little practical guidance to help teachers promote children's play in the indoor environment. Use of two new directions for research--design principles research and segments research--involving a collaboration of developmental and environmental disciplines, may provide greater practical knowledge than has previously been obtainable. (RH)

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# The Promotion of Play in the Indoor Play Environment

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# The Promotion of Play in the Indoor Play Environment

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The past decade has seen a renewed interest in the educational value, developmental significance, and recreational benefit of children's play. In some ways, we have made great progress toward understanding and promoting children's play. Recent inquiries range from the research of psychologists who examine short and long term outcomes supported by play to the creations of architects who have turned to the playground as an arena for informed design practice.

But another play environment requires our immediate attention. In the United States alone, millions of young children spend a major portion of their childhood days in early childhood classrooms. Each of these indoor play environments has only limited financial, physical, and human resources. Teachers allocate these often scant resources guided by intuition, practical considerations, and conventional wisdom (Kinsman and Berk, 1979). They may also consider child-related theory and research if it is available and speaks to their concerns.

The original question to be addressed in this chapter through review of child development and environmental literatures was a limited and practical one: "How can early childhood teachers plan the classroom physical environment of space, equipment and materials to promote play effectively? But pursuit of this question lead to an ironic conclusion-that while the amount

of play research is too great for a single review, the findings which point clearly toward setting the play environment are too few to guide the practitioner. Consequently, the amended purpose of this chapter is to argue this case through review of selected literature and to argue for new directions in research which have potential to inform and aid practitioners as they plan the classroom environment to promote children's play.

The Child Development Tradition

The disciplines of child development and early education have a common interest in children's play. Many educators stress the development of the "whole child" (Hendrick, 1980) and the value of play as a strategy toward that goal. In turn, developmental psychologists continue to delineate the contributions of play to many aspects of development (see Bruner, Jolly, and Silva, 1976; Herron and Sutton-Smith, 1971). The potential for dialogue and collaboration is great. Yet little guidance toward setting a playful environment can be culled from the developmental literature. This state of the research is illustrated below with examples from the psychological literatures on social play and pretend play.

The early childhood classroom is, above all, a social environment. Many parents enroll their children in these settings to provide them with a socializing experience. Mildred Parten's classic work (Parten, 1932) described typical levels of social play in young children, four of which are widely recognized today: in solitary play, a child plays alone and directs his separate activity without reference to that of others; in parallel play, a child chooses toys like those of children nearby, but plays beside rather than with others; in associative play, children engage in overt group play

with conversation and exchange of materials; in cooperative play, children engage in highly organized group play which involves a division of labor and roles to achieve a competitive, dramatic, or material goal.

With children ages two to four and-a-half years, Parten found a significant correlation between age rank and level of participation:

> Social participation is dependent, to a large extent, upon the age of the children. As a rule, the youngest children either play alone or in parallel groups, while the oldest individuals play in more highly organized groups." (p. 268)

Other researchers report similar findings more recently (for example, Barnes, 1971).

Consider how this single study might inform a teacher who wishes to support these levels in social play for a similar mixed age group in an indoor environment. A supportive set of materials for this range might include puzzles and playdough for solitary play, blocks for group play. A supportive range of physical settings within a classroom might include carrels and counters for individual play, larger areas and learning centers for group play. However, the implications for practice are less clear when other recent extensions of Parten's work are also considered. These studies either question the progression through Parten's levels or present one level of social play as superior to others.

The findings of several studies, such as Smith (1978), question Parten's orderly progression toward cooperative play. In a longitudinal examination, Smith found a substantial number of three year olds who progressed directly from solitary to associative and cooperative play, and other three and four year-olds who alternated their group associative and cooperative play with extended periods of solitary play. Rubin (1977) found much parallel play

to persist in his four and five year-old sample, while Bakeman and Brownlee (1980) found parallel play to be common as a brief interlude prior to group play. They suggest that "the movement from alone to parallel group play may not be a matter of years or months, but of minutes" (p. 877).

Further debate emanates from studies which place relative value on different levels of social play. For example, from the standpoint of social maturity, one might assign high value to the sophisticated cooperative play. Studies such as Serbin, Tonick, and Sternglanz (1977), where teacher praise was found to encourage much cross-sex cooperative play, support such a bias. But from the standpoint of problem-solving, an opposite view is supportable empirically. Moore, Evertson, and Brophy (1974) found solitary play to be "independent task-oriented behavior which is functional in school situations and indicative of social maturity rather than immaturity" (p. 834). Mac Kinnon (1962) supports the view that such solitary behavior may also contribute to an individual's creativity. In a retrospective analysis of the autobiographical narratives of over 600 people judged by peers as highly creative, these individuals were found to have spent and enjoyed much time alone (and with adults) rather than with peers during childhood.

This body of research on social play, while important from the standpoint of scientific validation and addressed to important concerns within the child development discipline, muddies the clear but often shallow waters of informed educational action. With respect to the progression in levels of social play, one cannot know what typifies social play in group settings because results of these studies differed from one experimental setting to the next. The point

and counterpoint of studies which stress the value of a particular level of social play leaves the teacher with a difficult choice. Should I encourage socially sophisticated cooperative play or investigative solitary play? If one sees both choices as desireable, a dilemma remains. How can limited resources of space, equipment, and materials be stretched to meet both ends? The social play literature provides no clear direction to teachers on these issues.

Children's pretend play represents a second example of generally unrealized educational and developmental symbiosis. The provision of dress-up clothes and role-play areas, and of books and records with fantasy themes, all attest to teachers' general support of this play. But within the developmental literature, clear but only occasional direction concerning the environment's support of pretend play can be found.

With respect to how the realism of materials affects this play in children aged two to five years, useful empirical guidance is available (Fein, 1975; Elder and Pederson, 1978; Golomb,1977). The general finding is summarized in Fein (1981a): "For young children, the best environment for pretense may be one containing an ample supply of realistic objects. For older children, such an environment may limit rather than enhance play" (p. 269). The teacher ready to buy blocks for Toddlers or housekeeping furniture for Kindergarten children to stimulate their pretend play would be better guided by her advice.

However, an integrative review (Fein, 1981b) of this play domain reveals the general lack of studies in child development to suggest features of architecture and settings which might promote pretense. Of the over two hundred fifty reviewed

articles and studies, Fein cites only fourteen which investigate or even speculate on this issue. Fein concludes that "setting factors such as crowding, material resources, noise level, adult activity, group size, or group composition have not been studied with respect to environmental factors influencing pretend behavior....(p. 1109), and notes the promise of environmental disciplines to provide insights into pretend play.

Why the paucity of such studies in the pretend play and social play literatures to guide teachers in planning the early education classroom? One can surmise several reasons. First, priorities within child psychology have traditionally focused upon individual variables, such as age, sex, and personality dimensions, and not upon environmental variables. Much work remains to specify the contributions of these individual variables to the broad concept and set of behaviors known as play. Second, the experimental research paradigm preferred in this discipline seeks to control variables which are not of interest, and therefore conceives of them as either neutral or confounding, rather than as contributory. Thus, the research on variations in object realism is a notable exception to the rule that environment rarely has served as an independent variable in developmental play research. And third, it is difficult to accurately describe, quantify, and manipulate the physical environment, a problem which encourages researchers to report only simple descriptions of experimental settings. However, several related environmental disciplines have assumed this task, in apparent agreement with what Jerome Bruner calls an ironic truism, "that the best way to predict the behavior of a human being is to know where he is: in a post office he behaves post office, at church

he behaves church" (Schoggen, 1978, p. 37).

The Environmental Tradition

Research on the relationship between environment and behavior comes from a variety of disciplines. Ecological psychologists (Barker, 1968; Barker and Wright, 1951; Gump, 1975a) examine people's behavior in a wide variety of environments, from whole communities to individual classrooms. Human ecologists (Brofenbrenner, 1977a, 1977b) similarly conceive of environments as interrelated and increasingly inclusive nested levels, from microsystems such as schools to the macrosystem or culture. Ethologists, traditionally interested in the adaptive significance of animal environment and behavior, have begun careful analysis of human ethology (Smith, 1974b).

Though they differ somewhat in theory and method, these disciplines have turned an eye toward an examination of the early education classroom environment and have the potential to inform planning for play. The range of literature is wide, and aspects of it are presented elsewhere (Gump, 1975; Day, 1983). For present purposes, the issue of social play will be revisited to highlight environmental studies which suggest that variables of materials and setting exert a strong "pull" on the nature of children's social play.

Quilitch and Risley (1973) provided children at different times with specially selected "social toys" (such as Pick Up Stix) and "isolate toys" (such as a Jig Saw Puzzle). Differences in children's behavior under the two conditions were dramatic, with social behavior 78% of the time when using social toys and only 16% of the time when using the isolate toys. Smith (1974a) found similar divergences toward solitary play when a class of children were

given only toys, and toward group play when given only large equipment. Vandenberg (1981) combined setting and materials manipulation, and offered his three to five year-olds both a big muscle room (with jungle gym, two slides, etc.) and a small muscle room (with table activities, paper and pencil, etc.). He found that younger children chose the fine muscle room and engaged in solitary and parallel play there. Older children chose the large muscle room, and engaged in associative play. Surprisingly, he found no instances of cooperative play there. One might speculate, though, that high levels of noise and movement in such a setting might preclude the communications and negotiations integral to cooperative play.

The pull of materials and setting on the types of social play found in these studies raises questions of environmental contributions to the persistent parallel play found by Rubin (1977), and to the optimal or transitional nature of parallel play found by Smith (1978) and Bakeman and Brownlee (1980). But beyond a demonstration of the powerful influence of materials and setting on an aspect of play behavior, little practical guidance is provided even by this set of studies which specifically manipulates the environment. It is highly unlikely that a preschool teacher would provide only toys to a class of children, provide only toys of a certain social valence, or have the luxury to provide separate rooms for different types of play. While there are of course exceptions, (see Shure 1963, for example), environmental studies typically do not provide direct guidance to help teachers promote children's play in the indoor environment.

New Directions for Research

What then, are useful new research directions to help the practitioner promote play in the early education environment? Given that so little is currently known, two quite different but complementary approaches are suggested. They are Design Principles Research and Segments Research. Each represents a possible inroad toward greater practical knowledge, though neither presents a clear and direct path to that end.

Design Principles Research, suggested by Moore (1980), is a call to actualize child-related theory in children's environments. The steps outlined include an examination of a theory (or, hypothetically, of a body of research findings), the development of derived principles for accurate implementation of the theory, and the application of a whole class of design solutions in an environment based on the principles. For example, his examination of developmental theory and research on exceptional children yielded the design principle of paced alternatives - "all play environments should have a variety of graded and pace alternatives for children of varying ability" (p. 12). Applied to the playground,his design solution provided several levels of difficulty for any activity (e.g. ramps and stairs). In the more limited indoor space, perhaps modular or transformable equipment would be an appropriate design solution derived from paced alternatives.

While Moore argues for research-based design principles, at this time the translation of play into practice might be more easily derived from grand theories, such as that of Jean Piaget. His theory of cognitive development is appropriate since it also describes successive stages of early childhood play: sensorimotor play, symbolic play and games with rules (Piaget, 1951). Several existing

curricular applications of the theory generally speak more to the roles of materials and social interactions in support of the child's constructive process (Kamii and De Vries, 1978; Forman and Kuschner, 1977; Forman and Hill, 1980), and speak less to the possible role of large scale setting factors. Consequently, to determine what a Piagetian environment is would be a valuable contribution to several bodies of thought. Yet, herein also lies the rub. What is a Piagetian environment? One built on general principles of the theory? One changing in design from one stage of play to another? One that provides the challenge of change to promote new thinking, or the continuity of stability to promote re-thinking?

With the Design Principles Research direction, principles and solutions of any theory will be open to debate, and whether the inroad of particular principles becomes a path to greater knowledge may turn on the merits of that debate. Yet this direction in environments research is a useful admonition to "think big", to turn a theory into action through a process of deduction, and to develop better play/learning environments for children now.

The second new direction, Segments Research, complements the first with an admonition to think small, and to inductively build our knowledge of how to plan play environments. It is a program of research with an individual classroom learning center, or in Gump's words, a segment, as the focus and unit of analysis (Gump, 1975b).

Children behave differently, and teachers often have different educational goals in each of these discrete arrangements of space, furniture, materials, and activities (Day, 1983). Is children's play usually the same in a block area as it is in a science area? Is it the same in open spaces as it is in small enclosures?

Answers to these somewhat rhetorical questions can best be investigated in segments. Such research seeks to apply the meaning of "behaving post office" and "behaving church" to children's play in the classroom.

For example, imagine a small block area in a classroom for three year-olds. Its boundaries are defined by a thick pile carpet and two block shelves across from one another. Surmise that parallel play predominates here, with little extended solitary play, and little cooperative play. Focused on this small universe, the researcher might wish to extend the range of social play in this segment. A first manipulation might enlarge the center to accomodate groups. Suppose that an examination of play behavior for some time after the manipulation reveals no change in social play.

In a second manipulation, some abstract unit blocks are replaced with realistic replicas of people and objects, guided by the child development research suggesting that realistic objects may enhance younger children's play (Fein, 1981a). Needless to say, in this hypothetical example, it works to promote cooperative pretend play. But use of a broad observational system, such as that described by Brofenbrenner (1977a) or Day (1983) could reveal the range of effects of such manipulations on behavior, not just on social or pretend play.

The Segments Research direction builds knowledge inductively with each manipulation, and can be guided by either research, theory, observation, or even intuition. An expansion to other segments, and to examinations of the effect of a single segment manipulation on behavior in other segments would be logical next steps in a Segments Research program.

While almost opposite in scope, these two new directions share several important similarities. Each involves the collaboration of developmental and environmental disciplines, an important step toward better play environments for children. Each has a kind of ecological validity, and leads directly to practice. Teachers can implement theory in a general fashion and can change single elements within a play environment. Finally,each has an immeasurable symbolic value. Kinsman and Berk (1981) describe an actual classroom's block and housekeeping segments "as the teacher had arranged them and as they had existed for the seventeen years she had been teaching in the classroom" (p. 68). It is important to legitimate the role of the teachers, the researchers, and children in setting an optimal environment for play through parallel practice and research.

In this chapter, elements of the literatures on play from both child development and environmental disciplines have been reviewed toward the goal of better indoor environments for play. From the standpoint of early education teachers, the review hopefully has not ignored a teacher's role in promoting play, but has focused on an often ignored aspect of it, setting the environment.

Suggestions for new directions are offered here with the potential to inform teachers and other play advocates about optimal play environments. Such investigations are needed soon. As a nation, we appear headed for yet another round of scrutiny of educational goals, and children's play as a national priority is rarely mentioned. It is necessary for play advocates to examine and to pursue the educational and developmental outcomes promoted through play. Moreover, it is imperative that teachers and researchers, parents and planners understand the mechanics of play without acceding to a mechanistic view of why and how children

play. The viewpoint presented here agrees that it is impossible to understand children's play solely from the objective properties of environment, but argues that it is equally impossible to promote it without objectively knowing play environments.

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